

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions is presented for ease of reference. None of the claims have been amended in this response.

1-54. (canceled)

55. (Currently Amended) A method for contacting at least two chemical species, comprising:

immobilizing an immobilized chemical species on a fiber;
placing said fiber on a support across a width of a channel formed in said support; and
disposing a mobile chemical species into said channel such that said mobile chemical species contacts said immobilized chemical species on said fiber.

56-74. (canceled)

75. (Previously Presented) The method of claim 55 wherein said immobilizing step includes immobilizing a different polynucleotide on each of a plurality of said fibers.

76. (Previously Presented) The method of claim 55 further comprising the step of moving said second chemical along said channel.

77. (Previously Presented) The method of claim 76 wherein said moving step includes the step of applying electro-osmotic force to said channel.

78. (Currently Amended) A method for analyzing the contact between at least two chemical species, comprising:

immobilizing an immobilized chemical species on at least a first one of a plurality of optical fibers;

placing said plurality of fibers on a support having a plurality of channels, where each fiber of said plurality of fibers is oriented across a width of one or more of said channels;

disposing a mobile chemical species into at least a first one of said plurality of channels such that said mobile chemical species contacts at least said first one of a plurality of optical fibers;

directing light to an end of said at least a first one of a plurality of optical fibers; and
viewing the light emitted from said at least a first one of a plurality of optical fibers.

79. (Previously Presented) The method of claim 78 wherein said directing step is accomplished by directing said light through a focusing lens.

80. (Previously Presented) A method for detecting the binding of two chemical species, comprising the steps of:

directing light at a fiber positioned in a support for holding a plurality of fibers substantially parallel to each other and having a plurality of channels aligned substantially parallel to each other for receiving one or more mobile chemical species, such that each fiber is in fluid communication with the one or more mobile chemical species, where the fiber has an immobilized chemical species thereon; and

detecting excitation light emitted from binding occurring between said immobilized chemical species and at least one of said one or more mobile chemical species.

81. (Previously Presented) The method of claim 80, wherein said detecting step comprises the steps of:

collecting said excitation light to produce collected excitation light; and

converting said collected excitation light into an electrical signal that is proportional to said collected excitation light.

82. (Previously Presented) The method of claim 81, wherein said detecting step comprises the step of detecting light emitted from said labeled chemical species at a plurality of predetermined locations along said fiber.

83. (Previously Presented) The method of claim 81, further comprising the step of gradually changing the temperature of the fiber over a predetermined range of temperature such that the temperature of said fiber will pass through an optimum temperature for binding of at least one of said one or more mobile chemical species and said immobilized chemical species.

84. (Previously Presented) A method according to claim 81, further comprising the step of verifying the chemical composition of said immobilized chemical species or said one or more mobile chemical species.